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### RUCKSACK.

The invention relates to a new type of back bag.

As it is known, a back bag, particularly for the excursion or the alpinism, generally includes/understands bag itself intended to receive the load, a rigid reinforcement out of U reversed attached with the back of the bag, and finally a harness of bearing, connected to the back of the bag, formed of a pair of shoulder straps and a belt. This way, the bearing is done for dominating portion thanks to the shoulder straps and thus on the shoulders. This way, the carrier must so distribute the load in the bag, so that the heavy objects are laid out not in low of the bag, but substantially in the vicinity of the medium. It follows that in the course of carrying, the muscles of high of the back, those of the neck, as well as the high one of the vertebral column, are strongly requested, which involves a nonnegligible tiredness quickly. In this solution although very largely widespread, the bearing is carried out like already said for essential portion thanks to the shoulder straps, therefore on the shoulders, the belt intervening only for the holding of the load in place.

The invention mitigates these disadvantages.

It aims a bag at back in which the bearing is carried out either substantially with the level of the shoulders, but for appreciable portion with the level of the hips, which improves of as much the conditions of carrying and attenuates tiredness substantially.

According to the invention, the rear part of the present belt a rigid plate laid out in the zone of lumbar, intended to receive the free end of the two legs of the rigid reinforcement out of U.

This way, thanks to the rigid reinforcement, one transfers the loads on the rigid plate from the belt laid out with the level of the lumbar ones, therefore hips, by creating a rigid bond between the vertical reinforcement and the horizontal belt which is attached firmly neither with the bag, nor with the back of the bag. It follows that the neck and the shoulders are reduced of as much.

In a form of preferred execution, on the one hand, the inner face of the present belt a first rigid plate laid out with the level of the zone of lumbar, and on the other hand, the rear external face of the present belt one second integral plate in its central part of the central part of the first plate, and comprising with each one of its two horizontal lateral ends, an open vertical bracket-sleeve on the high one, intended to receive the free end of the one of the two legs of the rigid reinforcement out of U reversed.

### Advantageously, in practice:

- the bracket-sleeves are not attached compared to the back of the bag and are free compared to the belt;
- the rear part of the belt is connected to the bag while passing freely in a tunnel spared for this purpose in low of the back of the bag, and is maintained laterally in place by horizontal straps attached to the belt and the bag;
- the two rigid plates are out of polypropylene;
- the two rigid plates are solidarized between them, in their central part, by seams;
- the rigid reinforcement out of U reversed is removable and marries an ergonomic bent form and the two legs present a flattened section.

The manner whose invention can be carried out and the advantages which result from this will arise better from the example of realization which follows in support of the annexed figures.

Figure 1 is a summary representation of an according back bag with the invention.

Figure 2 is a representation in summary prospect for the elements characteristics for the invention.

Figure 3 is a representation partial of the belt characteristic of the invention shown out of cut on figure 4.

While referring on figure 1, the carrier indicated by the general reference (1) relates to its shoulders and its back a bag, indicated by the general reference (3) including/understanding a bag itself (4) intended to receive the closed load by a hat (5). The back (2) of the bag (3) is replaced by a rigid reinforcement out of U reversed (6) attached with the top in a bracket (7) envisaged for this purpose with the top (5). The unit also includes/understands a harness of formed bearing of shoulder straps (8) and a belt (10).

The rigid reinforcement (6) (see figure 2) with the shape of U reversed and marries - an ergonomic bent form. It is formed substantially of two vertical branches respectively (11,12), whose section is flattened. These two vertical branches (11,12) are connected between them by a portion of connection (13) inserted and attached by all known means, such as seams, in the bracket (7) envisaged on the high one for this purpose. This reinforcement out of U reversed (6) can be made out of all known materials for this application, for example in light metal, even out of reinforced plastic. Each of the two vertical

branches (11,12) end in a free end (14,15) coming once in place with height of the kidneys or hips.

According to a first characteristic of the invention, the inner face of the belt (10) present in its central portion and in its rear part (20) a first rigid plate of reinforcement (21) laid out with height of the lumbar ones. Of known manner, this belt (10) is associated two straps (16,17) closed on the front by an also known quick fastener. The first rigid plate stiffener (21), for example out of polypropylene or very other rigid material, marries the ergonomic shape of low back to the level of the lumbar ones.

According to another characteristic of the invention, this first rigid plate (21) is associated on the external face of rear belt (10) to one second rigid plate of reinforcement (25) also laid out with the level of lumbar the, integral one in its central part (26) of the first rigid plate (21) by two vertical seams (27,28) of connection. This second rigid plate of reinforcement (25), generally in same material that the first rigid plate (21), present with each one of its two lateral ends of the brackets (30,31), obtained by moulding, assembly or very other technical equivalent. These vertical bracket-sleeves are open on the high one (32,33) so as to receive the free end (14,15) vertical branches (11,12) of the rigid reinforcement out of U reversed (6). The bracket-sleeves (30,31) are not attached with the belt (10), but are only integral of this one in the central part (26).

From known manner, the rear part characteristic of the belt (10), particularly the central portion (26), passes freely in a tunnel (40) spared for this purpose to low of the back of the bag, and is maintained laterally in place by horizontal straps (43) attached to the bag and the belt.

In an embodiment beneficial shown on figure 4, the inner face (50) of the belt (10) includes/understands in the order a fabric or a knitting of jersey (51) associated a layer (52) of polyurethane foam of comfort, then with a layer of polyethylene foam (53) intended to give behaviour to the unit. This layer (53) is associated on its other vis-a-vis the first rigid plate of reinforcement (21), which is covered by a resistant fabric (54), for example out of fabric, and on Extérieur with the second plate (25) and exactly with the central part (26), thanks to the seams (27,28).

The according back bags with the invention present many advantages compared to the bags marketed to date. One can quote:

- the fact that the bracket (30,31) imprisons the free end (14,15) of the rigid reinforcement (6), it thus does not need there to equip these ends with plug to avoid perforating the bag;
- the fact that the belt (10) is not attached with the bag (3), but only the reinforcement (6), makes it possible to easily change this belt for better adapting it to the morphology of the carrier;
- the fact that the brackets (30,31) are not stuck to the belt (10), and are thus released compared to this one, which authorizes a suitable tightening with the morphology of the carrier; ;
- finally and especially, the transfer of the load for essential portion on the hips and either on the shoulders, which reduces of as much the muscles of high of the back and the neck, and relieves the vertebral column also; nevertheless, to ensure the balance of the bag, one keeps the shoulder straps (8), in the same way that previously where this balance is ensured by the belt;
- in addition, like one transferred the loads on the low one from the back, one can then weigh down of as much low bag, which then transfers the centre of gravity to the bottom and brings closer the centre of gravity that of the carrier.